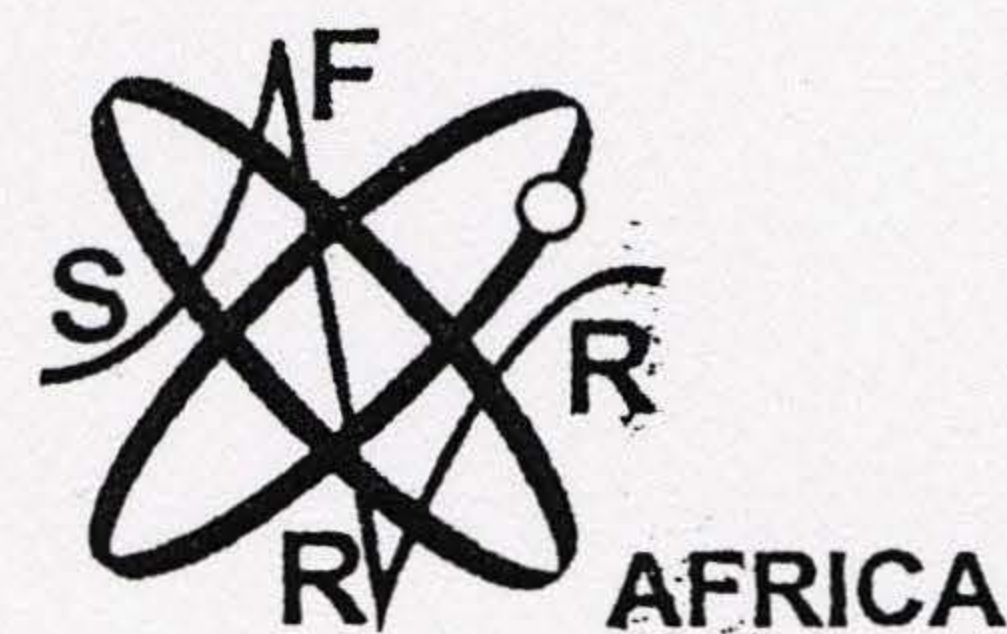


6th International Conference of the Society for Free Radical Research-Africa

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NITRIC OXIDE AND SUPEROXIDE RADICAL SCAVENGING ACTIVITY OF 2-STYRYLCHROMONES

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2-Styrylchromones are a novel class of chromones, vinylogues of flavones (2-phenylchromones), which have recently been found in nature. The relevant described property of flavones and other flavonoids, especially the hydroxylated derivatives, is their capacity to act as antioxidants. Indeed, there is a widely accepted view that the positive health effects of flavones are due to their antioxidant activity. Thus, the purpose of the present study was to characterize the putative scavenging effect of three synthetic 2-styrylchromones on $\cdot\text{NO}$ and $\text{O}_2\cdot^-$, using in vitro non-cellular systems.

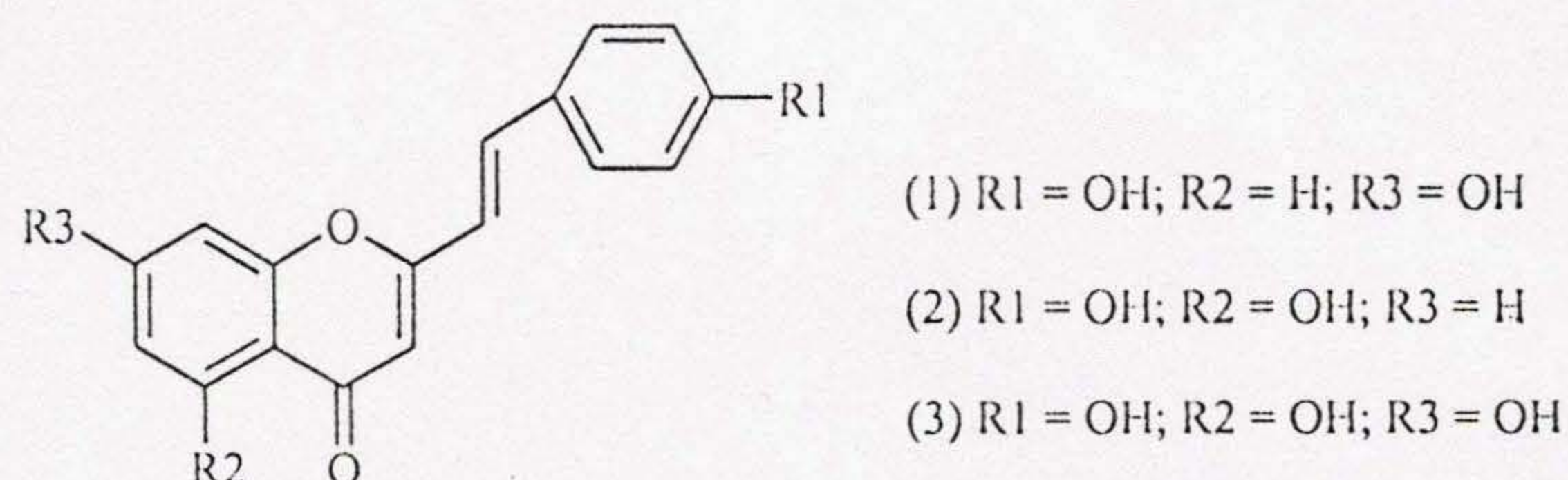


Figure 1. Chemical structure of tested 2-styrylchromones.

The $\cdot\text{NO}$ scavenging activity was measured by monitoring the oxidation of the non-fluorescent 4,5-diaminofluorescein (DAF-2) to the fluorescent triazolofluorescein by $\cdot\text{NO}$. $\cdot\text{NO}$ was generated from 3-(aminopropyl)-1-hydroxy-3-isopropyl-2-oxo-1-triazene (NOC-5). The $\text{O}_2\cdot^-$ scavenging activity was measured by monitoring reduction of nitroblue tetrazolium chloride (NBT) to the blue chromogen diformazan by $\text{O}_2\cdot^-$. $\text{O}_2\cdot^-$ was generated by the NADH/phenazine methosulfate (PMS), system. The synthesised 2-styrylchromones showed to be potent scavengers of $\cdot\text{NO}$ and $\text{O}_2\cdot^-$ in a concentration-dependent manner. Some of the evaluated IC_{50} values were as low as 10 μM for $\cdot\text{NO}$ and 50 μM for $\text{O}_2\cdot^-$, which indicates a promising application of these compounds as new scavengers for these radicals. The authors greatly acknowledge FCT and FEDER financial support for the project POCTI/QUI/59284/2004. David Costa acknowledges FCT and FSE his PhD grant (SFRH/BD/10483/2002).